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F. Battaglia

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September 6, 1991

Mara Elter
Regional Project Officer
U.S. Environmental Protection Agency
Waste Management Division
JFK Federal Building, Room 2203
Boston, Massachusetts 02203

Reference: Contract No. 68-W9-0003, TES 6
Work Assignment No. R01005
CIBA-GEIGY, Cranston, Rhode Island
Corrective Action Oversight

Subject: Deliverable: EPA Split-Sample Analytical Results
(SAS Case Number 6149A)

Dear Mara:

In accordance with the reporting requirements of the subject Work Assignment, enclosed are two (2) copies of the EPA Split-Sample Analytical Results (SAS Case Number 6149A) for the CIBA-GEIGY facility. This submittal satisfies an additional deliverable requirement for this Work Assignment. - SEDIMENT SAMPLES -

Please note this deliverable does not provide interpretation of the split sample results at the request of the WAM. Further evaluation will be performed by Alliance when the chemical data obtained by the facility is available for comparison.

Questions regarding this submission should be directed to the Alliance Project Manager, Joanna Hall at (508) 970-5757 ext 5146, or me.

Sincerely yours,

Peter Spawn
Regional Manager

PS/km

Enclosure

cc: Frank Battaglia/EPA Work Assignment Manager
Jill E. Robbins/TES-6 Contracting Officer (letter only)
Jack Lewis, Jr./Alliance TES-6 Contracts Manager (letter only)
Joanna Hall/Alliance Project Manager



SEMS DocID 651245

**EPA SPLIT-SAMPLE ANALYTICAL RESULTS
RAS CASE 6149A
CIBA-GEIGY
CRANSTON, RHODE ISLAND
CORRECTIVE ACTION OVERSIGHT**

Prepared for

**U.S. ENVIRONMENTAL PROTECTION AGENCY
Waste Management Division
JFK Federal Building, Room 2203
Boston, Massachusetts 02203**

Work Assignment No.:	R01005
EPA Region:	I
EPA Site/Facility I.D. No.:	N/A
Contract No.:	68-W9-0003 (TES 6)
Alliance Project No.:	1-635-058-1-1000-0
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Date Prepared:	September 6, 1991

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PRIVILEGED WORK - Product Prepared In Anticipation of Litigation



PRESENTATION OF ANALYTICAL RESULTS FROM EPA SPLIT SAMPLES

Site: Ciba-Geigy
Date Sampled: March 28, 1991
SAS Number: 6149A
SDG Nos: SDG 6149A-01
Contract: 68-W9-003, TES-6
WA Number: R01005

Introduction

The attached data and recommendations summary tables outline the validated results of SAS No. 6149A, collected at the site of the former Ciba-Geigy facility on March 28, 1991. Collection of these samples for dioxin analysis was not anticipated during the scoping of field oversight and therefore was not included in Alliance's Revised Oversight Work Plan (March 26, 1991). Samples were collected for dioxin analysis at the request of the EPA WAM in response to positive preliminary results reported by CIBA-GEIGY. RAS Case 16142 was also collected on March 28th for organic and inorganic analysis. Data from this RAS Case were included in the EPA split samples analytical results RAS Case 16142 (Alliance; August 7, 1991).

The objective for the collection of these split samples was not the quantitative, approach typically used for oversight tasks. The objective was to qualitatively compare the analytes identified by SAS CLP analytical methods for dioxin analysis to those identified by CIBA-GEIGY using SW-846 8280 methods.

The following samples were submitted as SAS Case 6149A:

Sample ID	Sample Type	Sample Location	Analysis
6149-01	Rinsate blank	-----	PCDD/PCDF
6149-02	QC Sample	NGK722	PCDD/PCDF
6149-03	QC Sample	MJO345	PCDD/PCDF
6149-04	Sediment	SD-05-M2	PCDD/PCDF
6149-05	Sediment	SD-07-M2	PCDD/PCDF
6149-06	Sediment	SD-07-M2	PCDD/PCDF
6149-07	Sediment	SD-01-R2	PCDD/PCDF
6149-08	Sediment	SD-03-R2	PCDD/PCDF
6149-09	Sediment	SD-00-M2	PCDD/PCDF

Validation was performed by Weston, ESAT for EPA, Region I in accordance with Region I guidelines.

Quality Control Results

A review of the data validation reports indicates that all data were accepted. A few data points were estimated (J) due to routine laboratory quality control problems. A brief explanation of the laboratory quality control problems is provided on the attached recommendations summary table.

Split Sample Comparison Comments

Alliance has not received a copy of Ciba-Geigy's data for each of these split samples. Therefore, a comparison of the split results was not performed at this time.

Split Sample Recommendations

Because Ciba-Geigy's data has not been received, Alliance can not make any recommendations regarding split sample comparisons at this time.

TABLE 1. RECOMMENDATIONS SUMMARY--SAS 6149A PCDD/PCDF ANALYSES

Sample Number	6149A-01	6149A-04	6149A-05	6149A-06	6149A-07	6149A-08	6149A-09
Dioxins							
2,3,7,8-TCDD	A	A	A	A	A	A	A
1,2,3,7,8-PeCDD	A	A	A	A	A	A	J ³
1,2,3,4,7,8-HxCDD	A	A	A	A	A	A	A
1,2,3,6,7,8-HxCDD	A	A	A	A	A	A	A
1,2,3,7,8,9-HxCDD	A	A	A	A	A	A	A
1,2,3,4,6,7,8-HpCDD	A	A	A	A	A	A	A
OCDD	A	J ¹	A	A	J ¹	A	J ¹
Furans							
2,3,7,8-TCDF	A	A	A	A	A	A	A
1,2,3,7,8-PeCDF	A	A	A	A	A	A	A
2,3,4,7,8-PeCDF	A	A	A	A	A	A	A
1,2,3,4,7,8-HxCDF	A	A	A	A	A	A	A
1,2,3,6,7,8-HxCDF	A	A	A	A	A	A	A
2,3,4,6,7,8-HxCDF	A	A	A	A	A	A	A
1,2,3,7,8,9-HxCDF	A	A	A	A	A	A	A
1,2,3,4,6,7,8-HpCDF	A	A	A	A	A	A	A
1,2,3,4,7,8,9-HpCDF	A	A	A	A	A	A	A
OCDF	A	A	J ²	J ²	A	A	A

A - Accept the data.

J¹ - Estimate the positive value and EMPC (J) for OCDD due to blank contamination. Some or all levels of OCDD found in the sample may be attributed to contamination.

J² - Estimate the positive value (J) and estimate the non-detected value (UJ) for OCDD since the relative percent difference criteria was not met. Non-homogeneity of the sample may result in inaccurate quantitation.

J³ - Estimate the EMPC value for 1,2,3,7,8-PeCDD since calibration criteria was not met. Instrument response to this compound was unstable and quantitation may not be accurate.

Note: The EMPC value is the estimated maximum possible concentration for a given analyte. This value incorporates the contribution from GC/MS signals which meet some but not all of the identification criteria for that analyte.

SITE: CIBA GEIGY - CRANSTON, RI

CASE/SAS NO: 6149A

Sample No	6149A-01		6149A-04		6149A-05	
Matrix	AQUEOUS		SOIL		SOIL	
TCDD/TCDF Conc	ng/L	DL/EMPC*	ug/kg	DL/EMPC*	ug/kg	DL/EMPC*
2,3,7,8-TCDD	U	0.100	U	0.0063	U	0.0317
1,2,3,7,8-PeCDD	U	0.382	U	0.0216	U	0.0536
1,2,3,4,7,8-HxCDD	U	0.250	U	0.0127	U	0.0634
1,2,3,6,7,8-HxCDD	U	0.216	U	0.0114	U	0.0536
1,2,3,7,8,9-HxCDD	U	0.226	U	0.0127	U	0.0585
1,2,3,4,6,7,8-HpCDD	U	0.412	U	0.0254	0.5682	
OCDD	U	0.375	0.0853 J		10.1707	
2,3,7,8-TCDF	U	0.070	U	0.0050	0.0414	
1,2,3,7,8-PeCDF	U	0.170	U	0.0127	U	0.0390
2,3,4,7,8-PeCDF	U	0.183	U	0.0127	U	0.0390
1,2,3,4,7,8-HxCDF	U	0.174	U	0.0089	U	0.0390
1,2,3,6,7,8-HxCDF	U	0.156	U	0.0076	U	0.0341
2,3,4,6,7,8-HxCDF	U	0.145	U	0.0076	U	0.0317
1,2,3,7,8,9-HxCDF	U	0.211	U	0.0114		0.0512*
1,2,3,4,6,7,8-HpCDF	U	0.184	U	0.0089	0.0878	
1,2,3,4,7,8,9-HpCDF	U	0.271	U	0.0127	U	0.0414
OCDF	U	0.203	U	0.0140	UJ	0.0292
TOTAL TCDD		17.891*J		2.0968*J		5.5024*J
TOTAL PeCDD	U	0.382	U	0.0216	U	0.0536
TOTAL HxCDD	U	0.250	U	0.0127	0.0487	
TOTAL HpCDD	U	0.412	U	0.0054	1.1463	
TOTAL TCDF		0.389*J		0.0458*J	0.5365 J	0.0024 J
TOTAL PeCDF	U	0.183	U	0.0127	0.0243	0.2560
TOTAL HxCDF	U	0.211	U	0.0114	0.0243	0.1219
TOTAL HpCDF	U	0.271	U	0.0127	0.1707	
TOXICITY EQUIVALENCY	0		0.000067		0.011	
DILUTION FACTOR	1		1		1	
% MOISTURE	N/A		21.5		59.0	
DATE OF RECEIPT	03/29/91		03/29/91		03/29/91	
SAMPLE EXTRACTION DATE	03/29/91		03/29/91		03/29/91	
ANALYSIS DATE	04/02/91		04/03/91		04/03/91	
GC/MS I.D.	VG70E		VG70E		VG70E	

Soil results in dry weight

SITE: CIBA GEIGY - CRANSTON, RI

CASE/SAS NO: 6149A

Sample No	6149A-06RE		6149A-07		6149A-08	
Matrix	SOIL		SOIL		SOIL	
TCDD/TCDF Conc	ug/kg	DL/EMPC*	ug/kg	DL/EMPC*	ug/kg	DL/EMPC*
2,3,7,8-TCDD	U	3.91	U	0.0104	0.0360	
1,2,3,7,8-PeCDD	U	0.0939	U	0.0379		0.1422*J
1,2,3,4,7,8-HxCDD	U	0.0835	U	0.0314	U	0.0573
1,2,3,6,7,8-HxCDD	U	0.0757	U	0.0274	7.4267	
1,2,3,7,8,9-HxCDD	U	0.0783	U	0.0287	1.6709	
1,2,3,4,6,7,8-HpCDD	0.6762		U	0.0340	617.9#	
OCDD	11.8041			0.0471*J	5396.4#	
2,3,7,8-TCDF	0.0522		U	0.0091	0.2484	
1,2,3,7,8-PeCDF	U	0.0469	U	0.0170		0.0403*
2,3,4,7,8-PeCDF	U	0.0496	U	0.0183	0.0870	
1,2,3,4,7,8-HxCDF	U	0.0496	U	0.0196	0.7685	
1,2,3,6,7,8-HxCDF	U	0.0443	U	0.0183	0.2016	
2,3,4,6,7,8-HxCDF	U	0.0417	U	0.0170	0.1231	
1,2,3,7,8,9-HxCDF		0.0704*	U	0.0248		0.0445*
1,2,3,4,6,7,8-HpCDF	0.1227		U	0.0209	25.78	
1,2,3,4,7,8,9-HpCDF	U	0.1357	U	0.0314	1.947	
OCDF	0.5117J		U	0.0261	92.304	
TOTAL TCDD		6.9033*J		1.7225*J	0.0849 J	4.582*J
TOTAL PeCDD	U	0.0939	U	0.0379		88.917*J
TOTAL HxCDD	U	0.0835	U	0.0314	29.172	29.813
TOTAL HpCDD	1.1488		U	0.0340	1122.6	
TOTAL TCDF	0.6266 J	0.8224 J	U	0.0287*J	0.9341 J	1.312 J
TOTAL PeCDF		0.2036*	U	0.0183	2.187	2.435
TOTAL HxCDF	0.1305	0.2010	U	0.0248	28.386	28.531
TOTAL HpCDF	0.2349		U	0.0314	136.454	
TOXICITY EQUIVALENCY	0.010		0.000036		4.414	
DILUTION FACTOR	1		1		1	
% MOISTURE	61.7		23.6		52.9	
DATE OF RECEIPT	03/29/91		03/29/91		03/29/91	
SAMPLE EXTRACTION DATE	03/29/91		03/29/91		03/29/91	
ANALYSIS DATE	04/11/91		04/03/91		04/03/91	
GC/MS I.D.	VG70E		VG70E		VG70E	

- Results reported from diluted analysis

Soil results in dry weight

SITE: CIBA GEIGY - CRANSTON, RI

CASE/SAS NO: 61491.

Sample No	6149A-09					
Matrix	SOIL		SOIL		SOIL	
TCDD/TCDF Conc	ug/kg	DL/EMPC*	ug/kg	DL/EMPC*	ug/kg	DL/EMPC*
2,3,7,8-TCDD	0.014					
1,2,3,7,8-PeCDD	U	0.084				
1,2,3,4,7,8-HxCDD	U	0.056				
1,2,3,6,7,8-HxCDD	U	0.048				
1,2,3,7,8,9-HxCDD	U	0.052				
1,2,3,4,6,7,8-HpCDD	0.128					
OCDD	1.652 J					
2,3,7,8-TCDF	U	0.018				
1,2,3,7,8-PeCDF	U	0.032				
2,3,4,7,8-PeCDF	U	0.034				
1,2,3,4,7,8-HxCDF	U	0.066				
1,2,3,6,7,8-HxCDF	U	0.06				
2,3,4,6,7,8-HxCDF	U	0.054				
1,2,3,7,8,9-HxCDF	U	0.08				
1,2,3,4,6,7,8-HpCDF	0.032					
1,2,3,4,7,8,9-HpCDF	U	0.062				
OCDF	0.09					
TOTAL TCDD		3.926*J				
TOTAL PeCDD	U	0.084				
TOTAL HxCDD		0.054*				
TOTAL HpCDD	0.24					
TOTAL TCDF	0.08 J	0.172 J				
TOTAL PeCDF	0.12					
TOTAL HxCDF		2.262*				
TOTAL HpCDF	0.04	0.212				
TOXICITY EQUIVALENCY	0.002					
DILUTION FACTOR	1					
% MOISTURE	50.0					
DATE OF RECEIPT	03/29/91					
SAMPLE EXTRACTION DATE	03/29/91					
ANALYSIS DATE	04/03/91					
GC/MS I.D.	VG70E					

Soil results in dry weight.